REMARKS

Reconsideration and allowance of the above identified application is requested in light of the above amendments and the following remarks.

The Present Invention

To briefly summarize, the claimed invention relates to a longwall support control for controlling the movements of longwall support units 1-18 in the longwall of a mine. In prior art longwall support control systems, a failure in a mining shield control device makes the entire system inoperative. However, the present invention advantageously permits operating the system despite such failure.

The invention as defined in the amended claims of the application comprises a plurality of longwall support units 1-18, a central control system 50, 51, and a plurality of mining shield control devices 34 connected to the support units and connected to the control system via a bus line 58.

Each mining shield control device 34 stores a unique code word and is programmed to be activated to carry out the respective shield functions only when the stored code word is received from the bus line.

A switching element 53 is associated with each control device 34 which is normally closed but opens to interrupt the bus line upon the occurrence of a failure in the associated longwall support unit 1-18.

In the preferred embodiment, the central control system comprises primary and secondary central control systems 50, 51 connected at the opposite ends of the bus line, note Fig. 3, and

each control device 34 includes a right and a left input element 52 which are connected to the bus line and to the switching element 53. The input elements 52 first check for the presence of the corresponding code word and then processes any operational signals.

Where the primary and secondary central control systems 50, 51 are provided, the shield control devices 34 on both sides of the opened switch can be operated by one of the primary or the secondary system.

The Claim Rejections Under 35 U.S.C. § 102(b)

In the Official Action, the Examiner rejected Claims 1, 2, and 4 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,146,271 to Ward et al. (the Ward et al. reference) or U.S. Patent No. 5,029,943 to Merriman (the Merriman reference).

The Ward reference discloses a mine roof support system having a remote control unit **22** and plurality of locally mounted units **20**, each associated to one of the roof support units. *See* col. 5, lines 20-27. A multi-core cable **23**, consisting of a plurality of individual cores **25** connects via cable sockets **26**, **27** on each unit to the units **20** of neighboring roof support units and with the remote control **22**. Each of the individual cores **25** of multi-core cable **23** serves another purpose, including an emergency stop line, audio lines, power lines, clock pulses, and lines reserved for transmission from the console to the support units and from the support unit to the control console. *See* col. 5, lines 28-45. However, as can be seen in Fig. 2, all of the individual cores **25** of multi-core

cable **23** are connected to different switch elements or function elements of the unit **20**. There are no means for disrupting one single or more than one of the individual cores **25** of the multi-core cable **23**. Rather, the multi-core cable **23** directly connects the one plug **26** on the one side of unit **20** with the other plug **27** on the other side of unit **20**, without a switching element in between, as is the case with the present invention. As a result, and unlike the present invention, the Ward reference does not permit locating and/or isolating a defect in one of the units **20** while continuing operation of the rest of the units.

The Merriman reference discloses a mining machine **11** traveling along a series of roof supports **16**, note col. 3, lines 1-7. Information gathered on the mining machine is transmitted by transmitter **30** of the machine and receiver **32** on each of the roof supports **16**, connected to the control box **27** on each roof support, note col. 4, lines 5-12. The control boxes are electrically connected to each other so that events on one support can be used to control an adjacent support, note col. 3, lines 65-68. As shown in Fig. 3, the control boxes **27** are connected to each other by one cable. Data received by one control box **27** is then passed along existing links to the face end control unit 28, note col. 4, lines 21-22. However, the Merriman reference is silent with respect to those links and thus does not teach or suggest how the cable fragments between two neighboring control boxes **27** are connected from entrance to exit of each of the control boxes **27**. Moreover, the Merriman reference does not disclose a switching element for interrupting the connection in between. As a result, the Merriman reference

does not teach or suggest any means, such as a switching element, for disrupting the cable connecting to neighboring control boxes **27**, or for locating a defect of one of the control boxes **27**, or to isolate a defective one of the control boxes **27** for continuing operation of the rest of the units.

In view of the remarks presented above, it is respectfully submitted that the rejections under 35 U.S.C. § 102(b) of independent Claim 1 with respect to both the Ward and Merriman references are overcome. Since all of the remaining claims depend from independent Claim 1, these dependent claims also avoid the rejections.

The Claim Rejections Under 35 U.S.C. § 103(a)

The Examiner also rejected Claims 1, 2, and 4 as being unpatentable over the'802 Kussel reference, the '842 Kussel reference, the '698 Kussel reference, or the Harris reference in view of the Hubner reference. In particular, the Examiner stated that the '802 Kussel reference, the '842 Kussel reference, the '698 Kussel reference, and the Harris reference "all disclose the invention substantially as claimed," but that "they all are silent about using an identifier to access the mining shield control device," which the Examiner states is taught by the Hubner reference. However, even assuming arguendo that the Examiner's contention is correct, an important aspect of the present invention is not disclosed or suggested, even when the cited references are considered collectively. In particular, none of the cited references teach a longwall support control for a plurality of control units having shield control devices, with each shield control device having a

switching element, as recited in base claim 1, as described above.

Certainly, the switching element is not taught by Hubner, which relates to a system for monitoring values of a gas analyzing measurement. Measuring device 2 is transported by an operator along a tunnel. Along the tortuous mine tunnel 4, the fixed stations 5, 6 are disposed in spaced relationship (C.5, L.74) The radio signals generated by the information transmitter 1, 21 on the backpack of moving operator are transmitted to the next one of the fixed stations 5, 6, i.e. receiver 5 thereof. From each of the fixed stations 5, 6 the received signal is transmitted to other stations as represented at 44 by wire (Col. 5, line 15, Fig. 3) and eventually communicated to the central station 45 via transmission line 46. The wire 44 may be replaced by radio contact, see antenna 52 in Fig. 3 and Fig. 2 and col. 5, line 45..

Hubner does indeed teach a plurality of stationary control units (fixed stations 5, 6), which are interconnected with each other by wire and from the last one to a central control unit. However, Hubner does not disclose any switch or anything similar to a switch for interrupting the connection between neighboring fixed stations 5,6.

Moreover Hubner could not possibly disclose any such switch, because the whole system of Hubner would become inoperative and no measuring signal could be transmitted to the central station 45, if the stationary control units (fixed stations 5, 6) would have a switch to interrupt the connection to the next fixed station 5, 6 (as is taught by the invention) and to the central station 45.

Thus, the teaching of the invention cannot be derived from Hubner.

Summary

For the reasons set forth above, it is respectfully submitted that the rejections of the independent Claim 1 under Sections 102 and 103 of the Patent Statute are legally untenable and should be withdrawn. Since the remaining claims depend from independent Claim 1, it is respectfully submitted that these claims are also in condition for allowance. Such action is solicited.

Respectfully submitted,

Charles B. Elderkin
Registration No. 24,357

Customer No. 00826
ALSTON & BIRD LLP
Bank of America Plaza
101 South Tryon Street, Suite 4000
Charlotte, NC 28280-4000
Tel Charlotte Office (704) 444-1000
Fax Charlotte Office (704) 444-1111

ELECTRONICALLY FILED USING THE EFS-WEB ELECTRONIC FILING SYSTEM OF THE UNITED STATES PATENT & TRADEMARK OFFICE ON JUNE 18, 2007.

LEGAL02/30373147v1